Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Currently Amended) A method ~~of providing authentication in a connection establishment process of a transmission control protocol, wherein the transmission control protocol includes a Link Establishment phase and an Authentication phase, wherein initiation of the Link Establishment phase is specified to occur apart from the Authentication phase, wherein a first processor attempts to establish a communication over a network, the method executing in a second processor, the method comprising the following acts occurring during the Link Establishment phase~~ comprising:

receiving, at a server processor, a request from a client processor to establish a ~~Transmission Control Protocol~~ transmission control protocol (TCP) connection ~~from the first processor~~, wherein the TCP includes a link establishment phase and an authentication phase, wherein initiation of the link establishment phase occurs apart from the authentication phase, and wherein the receiving step and following steps occur during the link establishment phase;

creating an extensible authentication protocol (EAP) session request;

encapsulating the EAP session request in a standard response to the request to establish the TCP connection; and

sending the standard response containing the EAP session request to the first processor ~~during the connection establishment process~~ while still in the link establishment phase, wherein the ~~first~~ client processor enters an authentication session with the server processor as a result of receiving the ~~authentication~~ EAP session request.

2 – 3.   (Canceled)

4.   (Previously Presented) The method of claim 1 wherein the standard response includes a segment used in a three-way handshake.

5.   (Previously Presented) The method of claim 1, wherein the standard response includes a value in a TCP segment header.

6.   (Original) The method of claim 5, wherein a first value is set for data from the second processor to the first processor, and where a second value is set for data from the first processor to the second processor.

7.   (Previously Presented) The method of claim 1, wherein the standard response includes a TCP option.

8.   (Previously Presented) The method of claim 7, wherein the standard response includes an octet.

9.   (Canceled)

10.   (Previously Presented) The method of claim 1, further comprising
       receiving a response from the first processor in response to sending the standard response;
       determining whether the response from the first processor indicates that the first processor will comply with the authentication session; and
       if the first processor will not comply with the authentication session then performing a substep of
       restricting access of the first processor.

11.   (Original) The method of claim 1, wherein the first processor includes a client process and wherein the second processor includes a server process.

12.   (Original) The method of claim 1, wherein the second processor intercepts a transmission from the first processor.

13 - 19. (Canceled)

20.   (Currently Amended) An apparatus ~~configured to provide authentication in a connection establishment process of a transmission control protocol, wherein the transmission control protocol includes a Link Establishment phase and an Authentication phase, wherein initiation of the Link Establishment phase is specified to occur apart from the Authentication phase, wherein a first processor attempts to establish a communication over a network, the apparatus~~ comprising:

~~an authentication session requestor configured to creating an authentication session request in a standard response to a TCP session request to establish a TCP connection, wherein the authentication session request is used to start an authentication session, during the Link Establishment phase; and~~

~~a transmitter configured to sending the first portion of transmission control protocol data to the first processor during the Link Establishment phase~~

one or more processors;

a network interface;

a computer-readable storage medium on which is stored instructions configured to cause the one or more processors to perform a method, the method comprising:

receiving, at a server processor, a request from a client processor to establish a transmission control protocol (TCP) connection, wherein the TCP includes a link establishment phase and an authentication phase, wherein initiation of the link establishment phase occurs apart from the authentication phase, and wherein the receiving step and following steps occur during the link establishment phase;

creating an extensible authentication protocol (EAP) session request;

encapsulating the EAP session request in a standard response to the request to establish the TCP connection; and

sending the standard response containing the EAP session request to the first processor while still in the link establishment phase, wherein the client processor enters an authentication session with the server processor as a result of receiving the EAP session request.

21.   (Original) The apparatus of claim 20, wherein the transmission control protocol includes standard TCP.

22.   (Original) The apparatus of claim 21, wherein the first portion of transmission control protocol data includes a request to establish a standard TCP connection.

23.   (Previously Presented) The apparatus of claim 22 wherein the standard response includes a segment used in a three-way handshake.

24.   (Previously Presented) The apparatus of claim 21, wherein the authentication session response includes a value in a TCP segment header.

25.   (Original) The apparatus of claim 24, wherein a first value is set for data from the second processor to the first processor, and where a second value is set for data from the first processor to the second processor.

26.   (Previously Presented) The apparatus of claim 21, wherein the authentication session item includes a TCP option.

27.   (Original) The apparatus of claim 26, wherein the option includes an octet.

28.   (Original) The apparatus of claim 20, wherein the authentication session includes an Extensible Authentication Protocol (EAP) session.

29.   (Currently Amended) A computer-readable storage medium including instructions <u>executed on a processor</u> ~~configured to provide authentication in a connection establishment process of a transmission control protocol, wherein the transmission control~~

~~protocol includes a Link Establishment phase and an Authentication phase, wherein initiation of~~ ~~the Link Establishment phase is specified to occur apart from the Authentication phase, wherein~~ ~~a first processor attempts to establish a communication over a network,~~ the computer-readable storage medium comprising:

~~one or more instructions configured to creating an authentication session request~~ ~~in a standard response to the request to establish the TCP connection first portion of transmission~~ ~~control protocol data, wherein the authentication session item is used to start an authentication~~ ~~session, during the Link Establishment phase; and~~

~~one or more instructions configured to sending the response to the first processor~~ ~~during the Link Establishment phase, wherein the first processor enters an authentication session~~ ~~as a result of receiving the authentication session request~~

one or more instructions configured to receive, at a server processor, a request from a client processor to establish a transmission control protocol (TCP) connection, wherein the TCP includes a link establishment phase and an authentication phase, wherein initiation of the link establishment phase occurs apart from the authentication phase, and wherein the receiving step and following steps occur during the link establishment phase;

one or more instructions configured to create an extensible authentication protocol (EAP) session request;

one or more instructions configured to encapsulate the EAP session request in a standard response to the request to establish the TCP connection; and

one or more instructions configured to send the standard response containing the EAP session request to the first processor while still in the link establishment phase, wherein the client processor enters an authentication session with the server processor as a result of receiving the EAP session request.

30 - 57. (Canceled)